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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,303	09/26/2001	James E. Lindemuth	H1799-00075	9930

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EXAMINER

PATEL, NIHIR B

ART UNIT	PAPER NUMBER
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3743

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DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,303

Applicant(s)

LINDEMUTH ET AL.

Examiner

Nihir Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 25th, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2 and 4-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 2 and 4 through 24 in Paper No. 6 is acknowledged.

Claims 1 and 3 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 2 is rejected under 35 U.S.C. 102(e) as being anticipated by Lewis et al. US Patent Application Publication No. US2003/0066381 A1. Referring to claim 2, Lewis discloses a heat energy dissipation device for a flywheel energy storage system (FESS), an FESS with such a dissipation device and methods for dissipating heat energy that comprises a first heat pipe having an evaporator and a condenser, the first heat pipe being mounted with the evaporator inside the canister and the condenser outside the canister (see figure 2); A second heat pipe having an evaporator thermally coupled to the condenser of the heat pipe, the second heat pipe having a condenser; and means for dissipating heat from the condenser of the second heat pipe Z(see figure 2).

Referring to claim 4, Lewis discloses a heat energy dissipation device for a flywheel energy storage system (FESS), an FESS with such a dissipation device and methods for dissipating heat energy that comprises a first heat pipe having an evaporator and a condenser, the first heat pipe being mounted with the evaporator inside the canister and the condenser outside the canister (see figure 2); a second heat pipe having an evaporator thermally coupled to the condenser of the first heat pipe, the second heat pipe having a condenser (see figure 2); a third heat pipe having an evaporator thermally coupled to the condenser of the second heat pipe, the third heat pipe having a condenser (see figure 2); and means for dissipating heat from the condenser of the third heat pipe (see figure 2).

Referring to claim 5, Lewis discloses a system wherein the canister is at least partially buried below ground, and the first heat pipe is positioned entirely below a ground surface (see figure 7C).

Referring to claim 6, Lewis discloses a system wherein the second heat pipe is partially buried below the ground surface, and partially above the ground surface (see figure 7C).

Referring to claim 7, Lewis discloses a system wherein the third heat pipe is completely above the ground surface (see figure 7C).

Referring to claim 8, Lewis discloses a system wherein the second heat pipe is a thermosyphon (see 0046 on page 4).

Referring to claim 9, Lewis discloses a system wherein the evaporator of the third heat pipe is oriented substantially vertically, and the condenser of the third heat pipe is at a substantial angle away from vertical (see figure 2).

Referring to claim 10, Lewis discloses a system wherein the angle of the condenser of the third heat pipe is at least about 5 degrees from horizontal (see page 5 0062 continued on page 6).

Referring to claim 11, Lewis discloses a system wherein the first heat pipe is mounted to a motor housing of a flywheel system within the canister (see figure 6A).

Referring to claim 12, Lewis discloses a system wherein the first heat pipe is mounted within a block of metal having a hole therethrough to receive the heat pipe, the block being mounted to the flywheel system (see figure 6A).

Referring to claim 13, Lewis discloses a system wherein the canister is a vacuum housing (see page 1).

Referring to claim 14, Lewis discloses a system wherein the heat dissipating means including a plurality of circular fins arranged in a fin stack (see figure 2).

Referring to claim 15, Lewis discloses a system wherein at least one of the heat pipes has a wick in the evaporator thereof that does not extend into the condenser thereof (see page 4).

Referring to claim 17, Lewis discloses a heat energy dissipation device for a flywheel energy storage system (FESS), an FESS with such a dissipation device and methods for dissipating heat energy that comprises a canister; an energy storage flywheel having a motor housing mounted inside the canister (see figure 6A); a first heat pipe having an evaporator and a condenser, the evaporator of the first heat pipe being mounted to the motor housing, the condenser of the first heat pipe outside the canister (see figure 2); a second heat pipe having an evaporator conductively coupled to the condenser of the first heat pipe, the second heat pipe having a condenser (see figure 2); a third heat pipe having an evaporator conductively coupled to

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the condenser of the second heat pipe, the third heat pipe having a having a condenser interfacing to a heat dissipating means (see figure 2).

Referring to claim 18, Lewis discloses a system wherein the second heat pipe is a thermosyphon (see page 4).

Referring to claim 19, Lewis discloses a system wherein the evaporator of the third heat pipe is oriented substantially vertically, and the condenser of the third heat pipe is at a substantial angle away from vertical (see figure 2).

Referring to claim 20, Lewis discloses a system wherein the angle of the condenser of the third heat pipe is at least about 5 degrees from horizontal (see page 5 0062 continued on page 6).

Referring to claim 21, Lewis discloses a system wherein the canister is a vacuum housing (see page 1).

Referring to claim 22, Lewis discloses a system wherein the heat dissipating means include circular fins arranged in a fin stack (see figure 2).

Referring to claim 23, Lewis discloses a system wherein at least one of the heat pipes has a wick in the evaporator thereof that does not extend into the condenser thereof (see figure 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis US Patent Application Publication No. 2003/0066381 A1 in view of Phillips et al. US Patent No. 5,587,880.

Lewis discloses the applicant's invention as claimed with the exception of providing one of the heat pipes that has a wick formed of sintered metal.

Phillips discloses a computer cooling system operable under the force of gravity in first orientation and against the force of gravity in second orientation that does provide one of the heat pipes that has a wick formed of a sintered metal. Therefore it would be obvious to modify Lewis's invention by providing one of the heat pipes that has a wick formed of sintered metal in order to increase the cooling process.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Nihir Patel whose telephone number is (703) 306-3463. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful the examiner supervisor Henry Bennett can be reached at (703) 308-0101.


Henry Bennett
Supervisory Patent Examiner
Group 3700

NP
August 8, 2003